UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R048AY003NM

Site Name: Mountain Valley

Precipitation or Climate Zone: 15 to 30 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site is located in mountain valleys in the ponderosa pine zone. It has gentle to moderate slopes and receives occasional light overflow from the main stream course or adjacent side slopes. The alluvial slopes immediately adjacent to the main stream are also included in this site. These sites are extended up the drainageway side slopes or gradients and may exceed 5 percent. Along valley bottoms where drainage is poor, it may blend with the Mountain Meadow ecological site. This site differs from the Mountain Meadow ecological site in the lack of high water table. Plant production tends to gradually decrease as the slopes become steeper due to less benefit from runoff water, but there are no clear breaks in the effect of slope. Slopes range from nearly level to 3 percent but may range up to 5 percent. Due to the low gradient of this site, exposure differences are not as pronounced as in most mountain sites. Elevation ranges from 7,000 to 9,000 feet above sea level.

Land Form:

1. Mountain valley
2.
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	7,000	9,000
Slope (percent)	<3	5
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

Annual precipitation varies from 15 to 25 inches on this site and of this amount approximately 30 percent occurs in the form of winter snows. Variations in both winter and summer precipitation may be quite extreme ranging from rather open, dry winters to winters during which several feet of snow are accumulated. Summer thunderstorm activity, which is greatest during July and August, is also very sporadic.

Air temperatures vary from a monthly mean of 19 degrees F in January to 68 degrees F in July. Mean monthly temperatures also vary elevationally. Winter low temperatures fall below the freezing mark much of the time from mid September through the first of June. Dates of the last killing frost vary elevationally. At lower elevations the last killing frost occurs around May 6th and at higher elevations June 22nd. Dates of the first killing frost vary from September 9th at higher elevations and October 11th at the lower elevations.

The freeze-free season ranges elevationally from 141 days at the lower elevations to 79 days at the higher elevations. About 50 percent of the precipitation falls in the form of rainfall during the freeze-free season. The precipitation pattern is beneficial to both cool-season and warm-season plants. The growing season lasts from 3 to 5 months extending from early May through October. Some cool-season plants begin their growth with snow recession and also enjoy a brief growing period in the fall.

Mountain winds have an effect on growing conditions within this site in their effect on increasing moisture losses and litter in the surface soil horizon. Availability of the moisture for plant growth is more of a limiting factor on this site than it is on site of higher elevations. Forage production is dependent upon both winter and summer moistures; and therefore, yields of forage fluctuate directly with the amount of precipitation. Evaporation rates vary with elevations within the site. Rates are generally lower at higher elevations and increase at lower elevations, particularly on southern and western exposures.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	103	144
Freeze-free period (days):	127	169
Mean annual precipitation (inches):	15	30

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.32	.88	14.2	46.8
February	.33	1.13	16.7	50.0
March	.62	1.79	20.4	55.7
April	.81	1.71	25.6	63.6
May	1.12	2.00	33.3	72.7
June	1.26	2.27	40.6	82.4
July	2.68	4.24	44.9	84.9
August	2.87	4.48	44.0	81.8
September	1.63	1.92	38.1	76.8
October	1.05	1.64	29.2	67.7
November	.56	1.15	20.3	55.6
December	.41	1.06	14.5	48.7

Climate Stations:

				Period		
Station ID	291813	Location	Cimarron 4SW, NM	From: 5/1/1904	To:	12/31/01
Station ID	293488	Location	Gascon, NM	From: 11/18/53	To:	12/31/01
Station ID	296275	Location	Ocate 1N, NM	From: 08/01/60	To:	12/31/01
Station ID	296676	Location	Pecos Ranger Station, NM	From: 01/01/16	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site could be influenced by water from a stream. This site is not influenced by water from a wetland.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:
N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

Soils on this site are well drained and deep to very deep. The surface layer is very fine sandy loam with subsoil of loam or silty clay loam. These soils have moderate to moderately high permeability. Runoff is medium. Available water-holding capacity is high. Effective rooting depth is 20 inches to more than 60 inches. Severe gullying can carry off most of the water, and a loss of topsoil greatly reduces water intake. Gullies that carry off extra water will drastically alter the moisture-plant relationship in many areas.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. Loam
2. Sandy loam
3. Very fine sandy loam

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Loamy
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A

Subsurface Fragments <=3" (%Volume): 15 to 35
Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately slow
Depth (inches):	40	>72
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	0.00	1.00
Soil Reaction (1:1 Water):	6.1	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	9	12
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
This site is dominated by grasses and is characterized by both warm and cool-season bunch grasses. The dominant aspect is grassland although scattered ponderosa pine may occur in small amounts. Scattered clumps of oak, snowberry and other shrubs may occur on the side slopes of the site. Forbs and shrubs do not make up more than 15 percent of the annual yield. Tree species usually associated with this site and seen widely scattered are ponderosa pine. The overstory canopy is less than 2 percent.

Canopy Cover:	
Trees	<2 %
Shrubs and half shrubs	5 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	45
Bare ground	20
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	30
Litter (average depth in cm.)	4

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	1,190	1,530	2,125
Forb	140	180	250
Tree/Shrub/Vine	70	90	125
Lichen			
Moss			
Microbiotic Crusts			
Total	1,400	1,800	2,500

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	MUMO	Mountain Muhly	360 – 450	360 – 450
2	FEAR	Arizona Fescue	216 – 270	216 – 270
3	BRMA4	Mountain Brome	216 – 270	216 – 270
4	BLTR	Pine Dropseed	216 – 270	216 – 270
5	PASM	Western Wheatgrass	126 – 180	126 – 180
6	BOGR2	Blue Grama	54 – 90	54 – 90
7	SCSC	Little Bluestem	54 – 90	54 – 90
8	DECA18	Tufted Hairgrass	54 – 90	54 – 90
9	HECO26	Needleandthread	54 – 90	54 – 90
10	ANGE SONU2	Big Bluestem Indiangrass	54 – 90	54 – 90
11	POA KOMA	Bluegrass spp. Prairie Junegrass	54 – 90	54 – 90
12	CAREX	Sedge spp.	54 – 90	54 – 90
13	2GRAM	Other Grasses	54 – 90	54 – 90

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	VICIA LATHY TRIFO IRIS	Vetch spp. Peavine spp. Clover spp. Iris spp.	54 – 90	54 – 90
15	ACHIL RATIB VIOLA	Yarrow spp. Coneflower spp. Viola spp.	54 – 90	54 – 90
16	2FORB	Other Forbs	54 – 90	54 – 90

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
17	QUERC SYAL AMUT ARFR4 ARGL9	Oak spp. Snowberry Serviceberry Fringed Sagewort Cudweed Sagewort	54 – 90	54 – 90
18	2SD	Other Shrubs	54 – 90	54 – 90

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other species that could appear include: Thurber fescue, oatgrass, timothy, threeawn spp., redtop, bottlebrush squirreltail, hairy mountainmahogany, big sagebrush, sideoats grama, ponderosa pine, muttongrass, spike muhly, lupine, penstemon, aster and rabbitbrush spp.

Plant Growth Curves

Growth Curve ID **3103NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Bunch grass grassland with minor components of forbs and shrubs.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	10	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This ecological site provides habitats, which support a resident animal community that is characterized by elk, Colorado chipmunk, golden mantled ground squirrel, Gunnison prairie dog and western bluebird. Breeding violet-green swallows and turkey uses these sites. Mule deer use the sites seasonally.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Brycan	B
Hesperus	B
Kinesava	B

Recreational Uses:

This site offers recreation potential for picnicking, hiking, camping, horseback riding, nature observation and photography. Hunting for mule deer and elk is poor to fair. The aesthetic appeal is enhanced by the break in the physiographic features from the steep wooded areas to the open flat grassland.

Wood Products:

This site produces no commercial wood products. Tree species of ponderosa pine and occasional juniper are found which may supply firewood or an occasional Christmas tree from small seedlings.

Other Products:

Grazing:

Approximately 90 percent of the annual yield are from species that furnish forage for grazing animals. The site can be grazed seasonally from June 1st to October 1st. The site can be used by all classes of livestock during this grazing season. Since the growing season and the period of use on this site practically coincide, the key forage plants are placed at a considerable disadvantage. While subject to use, they must produce seed and store reserved carbohydrates and must accomplish this in a relatively short period of time. Continuous grazing during this period of time will result in a deterioration of the potential plant community. Desirable forage plants such as mountain muhly, Arizona fescue, mountain brome, pine dropseed and tufted hairgrass will decrease as the plant community deteriorates. Species most likely to invade this site or increase from trace amounts are Kentucky bluegrass, sleepygrass, pingue, rabbitbrush, cinquefoils, snakeweed and introduced annuals. Some of these usually move in as ecological conditions deteriorate accompanied by a sharp increase in the percentage of blue grama in many cases. Also likely to increase significantly are sagebrush, oak, herbaceous sage, vetches and herbaceous cinquefoils. Western wheatgrass may hold its own initially but eventually break up into weak remnants. Most of the bunchgrass species listed will disappear as deterioration advances. In this condition, shrubby cinquefoils are often dominant or there are patches of sleepygrass and various annual and perennial forbs. A system of deferred grazing, which varies the time of grazing and rest in each pasture during consecutive years, is needed to maintain or to improve upon a healthy well-balanced plant community.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	1.2 – 2.8
75 – 51	1.8 – 3.5
50 – 26	2.5 – 5.3
25 – 0	5.3+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	P	P	P	P	P	P	D
Mountain Muhly	Muhlenbergia montana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Tufted Hairgrass	Deschampsia caespitosa	EP	D	D	P	P	P	P	P	P	D	D	D	D
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	Blepharoneuron tricholepis	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Big Bluestem	Andropogon gerardii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Clover	Trifolium spp.	EP	P	P	P	P	P	P	P	P	P	P	P	P
Vetch	Vicia spp.	EP	D	D	P	P	P	P	P	P	D	D	D	D
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Coneflower	Ratibida spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Viola	Viola spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Indiangrass	Sorghastrum nutans	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	D	D	D	D	D	D	D
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	U	U	D	D	D	U	U	U	U	U	U	U
Pine Dropseed	Blepharoneuron tricholepis	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	D	U
Sedge	Carex spp.	EP	U	U	D	D	D	U	U	U	U	U	U	U
Clover	Trifolium spp.	EP	P	P	P	P	P	P	P	P	P	P	P	P
Vetch	Vicia spp.	EP	D	D	P	P	P	P	P	P	D	D	D	D
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Coneflower	Ratibida spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Viola	Viola spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Wildlife

Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Clover	Trifolium spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Vetch	Vicia spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Coneflower	Ratibida spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Viola	Viola spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Oak	Quercus spp.	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Colfax, Mora, Rio Arriba, Sandoval, San Miguel, Santa Fe, Taos**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Rocky Mountains 48 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Colfax, Taos, Mora, San Miguel, and Santa Fe.

Characteristic Soils Are:	
Brycan	Hesperus
Kinesava	
Other Soils included are:	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	09/01/78	Don Sylvester	09/01/78

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	09/18/02	George Chavez	2/12/03